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A new species of *Euscorpiops* Vachon 1980 from Laos (Scorpiones: Euscorpiidae: Scorpiopinae)

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Abstract — *Euscorpiops alexandreanneorum* sp. n., belonging to the family Euscorpiidae Laurie, is described on the basis of a single male specimen collected in the north of the Province of Luangprabang, District of Muang Ngoi, Laos. The new species is characterized by slender body, very elongated pedipalps and particular trichobothrial pattern. This new scorpion taxon may represent yet another endemic element for the fauna of Laos.

Key words — Scorpion, euscorpiid, Laos, new species, slender body, elongated pedipalps, trichobothrial pattern

Introduction

As recently synthesized (Lourenço 2013), historical decisions around the taxonomic classification of subfamily Scorpiopinae can be estimated as complicated. Scorpiopinae was first proposed by Kraepelin (1905) as Scorpiopsinae, a subfamily of Vaejovidae. The correct Latinized subfamily name, derived from *Scorpiops* was corrected by Fet (2000). Earlier, Francke (1976) drew attention to the inconsistent classification of Kraepelin (1905) and suggested that Scorpiopsinae should no longer be incorporated in Vaejovidae. Several years later, Stockwell (1989) raised Scorpiopsinae to family level (as 'Scorpiopsidae'), and Lourenço (1998) confirmed this decision. Subsequently, Soleglad & Sissom (2001) downgraded Scorpiopidae to a subfamily of Euscorpiidae, grouped its Asian genera into the tribe Scorpiopini, and also included in this subfamily the North American genus *Troglocormus* (tribe Troglocormini). According to morphological assessments, the subfamily currently forms a monophyletic group within Euscorpiidae, and does not share any synapomorphies with North American Vaejovidae (Soleglad & Sissom 2001). The tribe Scorpiopini includes six Asian genera, mainly from the South and Southeast of the continent.

Several years before the taxonomic changes made by Stockwell (1989), Lourenço (1998) and Soleglad & Sissom (2001), Vachon (1980) revised *Scorpiops* and described three new subgenera in addition to the nominotypical subgenus *Scorpiops*; *Alloscorpiops*, *Euscorpiops*, and *Neoscorpiops*. These four subgenera were later elevated to generic rank by Lourenço (1998), who added the monotypic genera *Parascorpiops* Banks 1928 and *Dasyscorpiops* Vachon 1974, bringing the total number of genera to six. Kovařík (2000) revised Scorpiopidae and synonymized *Euscorpiops* with *Scorpiops*. Soleglad & Sissom (2001) then restored *Euscorpiops* based on the position of chela trichobothrium **Eb**$_3$ and the presence of an annular ring on the telson. For more details on the historical issues and composition of the subfamily Scorpiopinae refer to Lourenço (2013). In the present note a new species belonging to the genus *Euscorpiops* is described from northern Laos. The new species may represent yet another endemic element to this country.

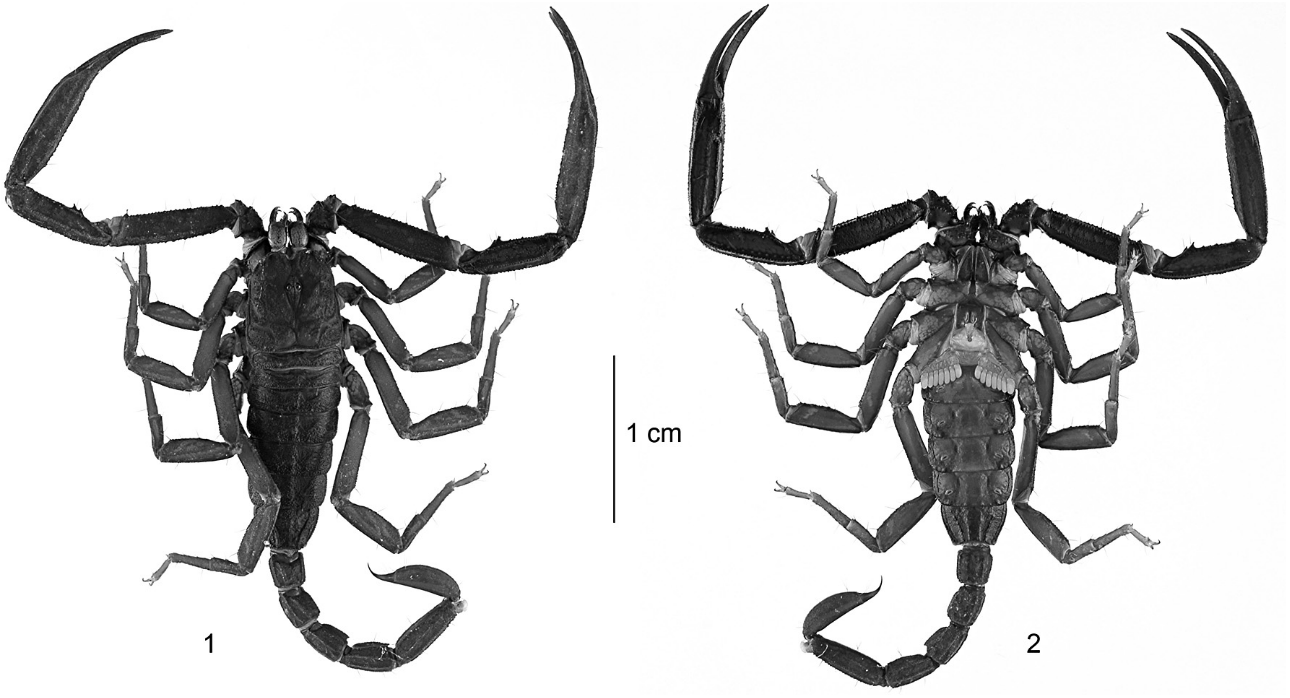
Methods

Illustrations and measurements were produce using a Wild M5 stereo-microscope with a drawing tube and an ocular micrometer. Measurements follow Stahnke (1970) and are given in mm. Trichobothrial notations follow Vachon (1974) and morphological terminology mostly follows Vachon (1952) and Hjelle (1990).

Taxonomic treatment

Family Euscorpiidae Laurie 1896
Subfamily Scorpiopinae Kraepelin 1905
Genus *Euscorpiops* Vachon 1980
Euscorpiops alexandreanneorum sp. n.
(Figs. 1–14)

Diagnosis. The new species presents most of the characteristics already defined for those belonging to the genus *Euscorpiops* (Vachon 1980; Soleglad & Sissom 2001). It can, however be characterized by a slender body, very elongate pedipalps and particular patterns for some



Figs. 1–2. *Euscorpiops alexandreanneorum* sp. n., male holotype, dorsal and ventral aspects.

trichobothrial 'territories' or series. Femur with three trichobothria: dorsal, internal and external. Patella with two dorsal, one internal, 14 ventral and 21 external trichobothria, the latter of which is unusually high. Chela-manus with four ventral, two dorsal (**Dt, Db**), two internal (**ib, it**), one **Est**, five **Et**, one **Esb** and three trichobothria in the **Eb** series. The **Esb** is located in the same axis between **Eb**$_2$ and **Eb**$_3$. Trichobothrium **Eb**$_3$ is very distal in relation to **Eb**$_2$.

Type material. Laos, Luangprabang Province, District of Muang Ngoi, 1 km N of Muang Ngoi (20°42′48.33″ N, 102°40′26.26″ E), 340 m, 17/IX/2012, (A. Teynié & A. Lottier). Holotype male. Deposited in the Muséum national d'Histoire naturelle, Paris.

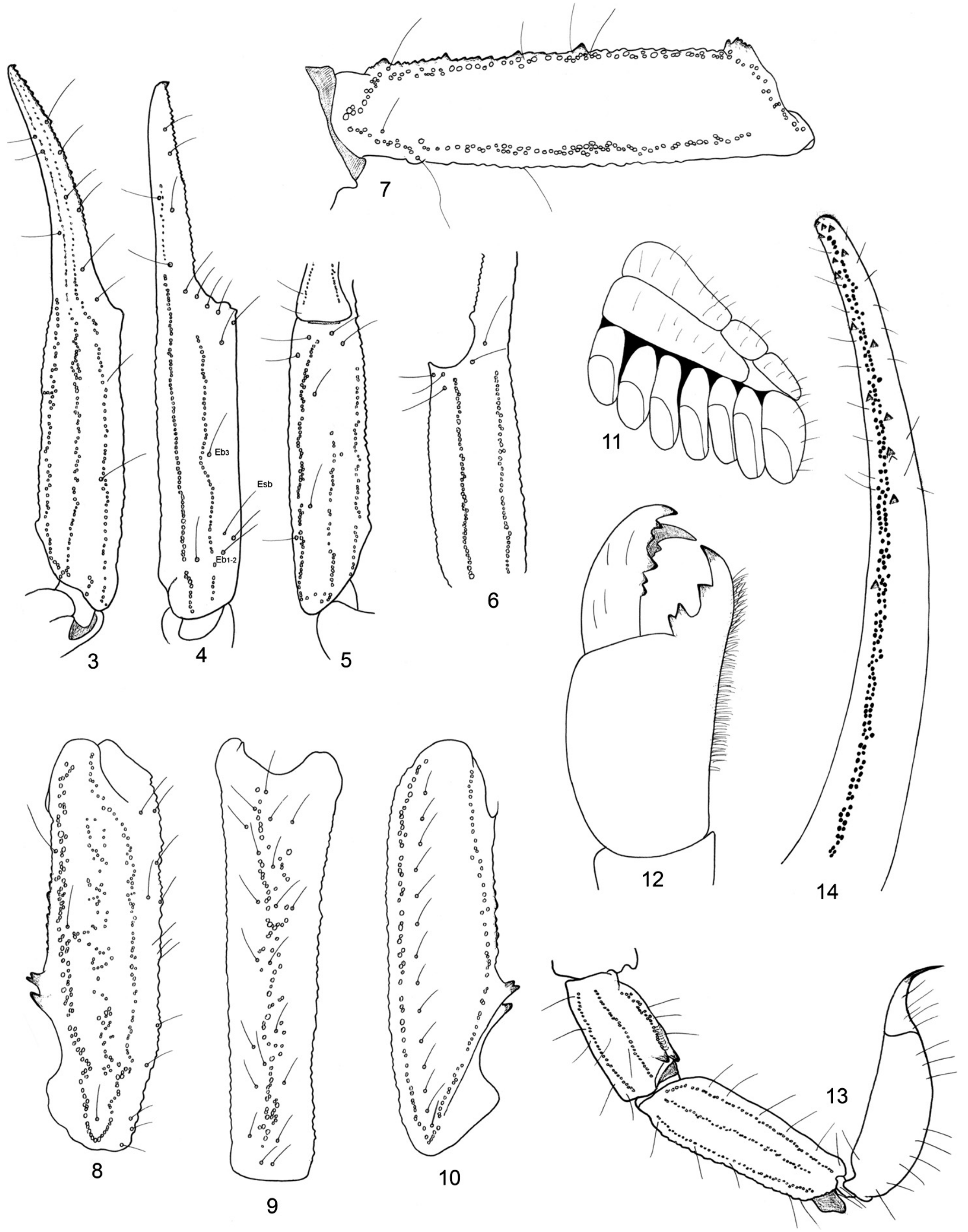
Etymology. The specific name is a combination of the names of Alexandre Teynié and Anne Lottier, Clermont-Ferrand, France who together collected the new species.

Ecological notes. The scorpion was collected in a limestone wall at 2.20 m from the ground. The wall is located in a forested zone on the margins of the Nam Ou, and presents a very strong inclination. This karstic bloc comprises several caves (Figs. 15–17). The scorpion, however, does not show any signs of adaptation to cave life.

Description. Species of small size relative to other species of the genus, adult male 38.2 mm in total length.

Coloration. Dark reddish-brown to blackish. Carapace dark brown with reddish zones in particular on furrows. Tergites reddish-brown. Metasomal segments blackish-brown; telson brownish with lateral yellow stripes; base of aculeus reddish-brown and tip blackish. Chelicerae blackish-yellow with blackish variegated spots. Pedipalps blackish-brown; extremities of fingers slightly red. Legs brownish-yellow. Venter and sternites reddish-yellow to reddish-brown; genital operculum and pectines yellow, slightly infuscated.

Morphology. Carapace strongly granular, furrows moderately deep. Median eyes anterior to centre of carapace; three pairs of lateral eyes, the third pair only slightly smaller than the first two. Sternum pentagonal, longer than wide. Tergites moderately to strongly granulated; VII with five carinae. Pectines large; pectinal tooth count 7–7; fulcra absent. Sternites almost smooth and punctated; sternite VII with four moderate carinae and some granulations. Metasomal segment I wider than long; segments II to V longer than wide; 10-8-8-8-7 carinae present on segments I to V; dorsal carinae on segments I–IV with a single, strong, posterior spinoid granule, better marked on III–IV; metasomal tegument weakly granulated; ventral carina on segment V with spinoid granules. Telson vesicle with minute granulations, almost smooth. Setation on metasomal segments and telson moderate. Pedipalps: femur with dorsal internal, dorsal external, ventral internal and ventral external carinae strongly marked; tegument moderately to strongly granular. Patella with dorsal internal, ventral internal, dorsal external, ventral external and external carinae strongly marked; one very strong, bifid and one less strong spinoid granule present on internal aspect, the interno-ventral being larger than the interno-dorsal granule; tegument moderately granular. Chela with dorsal marginal, external secondary, ventral internal and ventral carinae strongly marked; other carinae moderately marked; tegument granulated dorsally and ventrally. Chelal fingers



Figs. 3–14. *Euscorpiops alexandreanneorum* sp. n., male holotype. 3–10, trichobothrial pattern (3–6, chela, dorso-external, external, ventral and internal aspects; 7, femur, dorsal aspect; 8–10, patella, dorsal, external and ventral aspects); 11, pecten; 12, chelicera; 13, metasomal segments IV–V and telson, lateral aspect; 14, cutting edge of movable chelal finger.

with two longitudinal series of granules and a few inner and several outer accessory granules (Fig. 14). Chelicerae dentition as in figure 12 (Vachon 1963); 6–7 teeth on ventro-internal face of movable finger. Trichobothriotaxy type **C**, as on Figs. 3–10 (Vachon 1974): see diagnosis for additional details.

Morphometric values (in mm) of male holotype. Total length (including telson) 38.2. Carapace: length 6.0; anterior width 3.3; posterior width 6.0. Mesosoma length 11.8. Metasomal segment I: length 2.0, width 2.1; II: length 2.2, width 1.9; III: length 2.4, width 1.8; IV: length 3.0, width 1.7; V: length 4.9, width 1.7, depth 1.6. Telson length 5.9. Vesicle: width 1.6, depth 1.5. Pedipalp: femur length 8.0, width 1.9; patella length 6.6, width 2.0; chela length 14.2, width 2.1, depth 1.9; movable finger length 6.7.

Relationships. Few other species of *Euscorpiops* have

Fig. 15 Natural habitat of the new species in the region of Muang Ngoi, northern Laos.

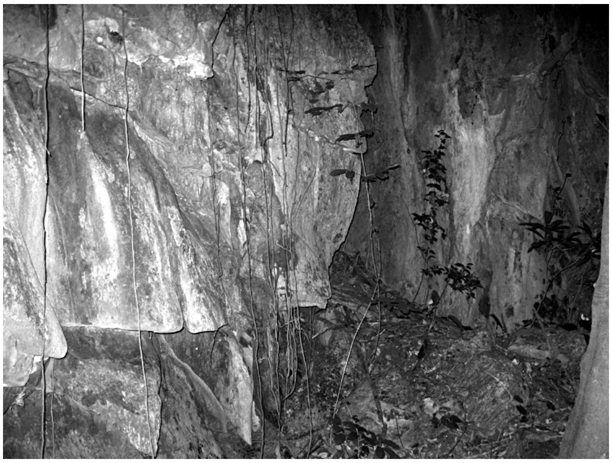


Fig. 16. The limestone wall in which the new species was found.

been described from Laos or nearby countries. Namely, *E. kubani* Kovařík 2004 was described from Laos, *E. binghamii* (Pocock 1893) from Myanmar, and *E. kaftani* (Kovařík 1993), *E. sejnai* (Kovařík 2000) and *E. thaomischi* Kovařík 2012 from Vietnam (Fig. 18). The new species can, however, be readily distinguished from these species and in particular from *E. kubani* and *E. thaomischi* by a number of characters: (i) very small adult size and quite distinct morphometric values, (ii) third pair of lateral eyes almost as big as the two other pairs, (iii) pedipalp fingers without any scalloping of the proximal dentate margin of fixed finger in males, (iv) 14 ventral and 21 external trichobothria on patellae; these numbers being 9–10/18–19 for *E. kubani* and 11–12/18 for *E. thaomischi*.

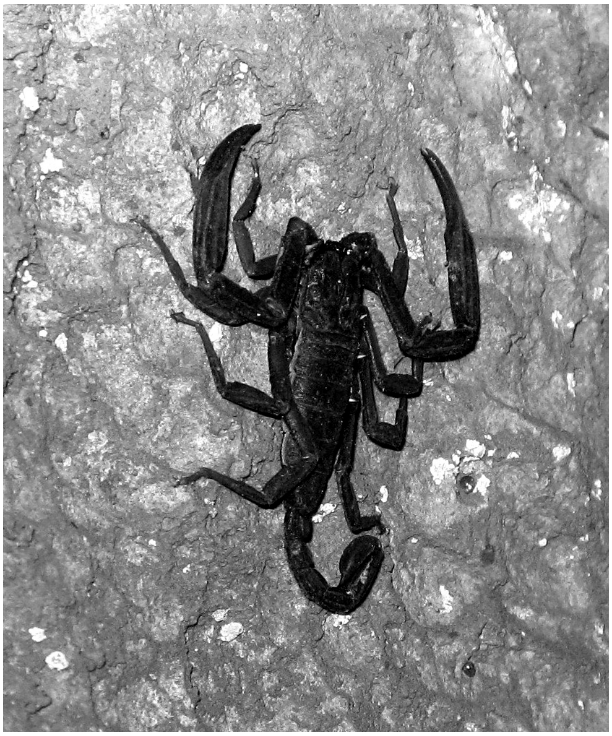


Fig. 17. The holotype on the wall, just before its collection.

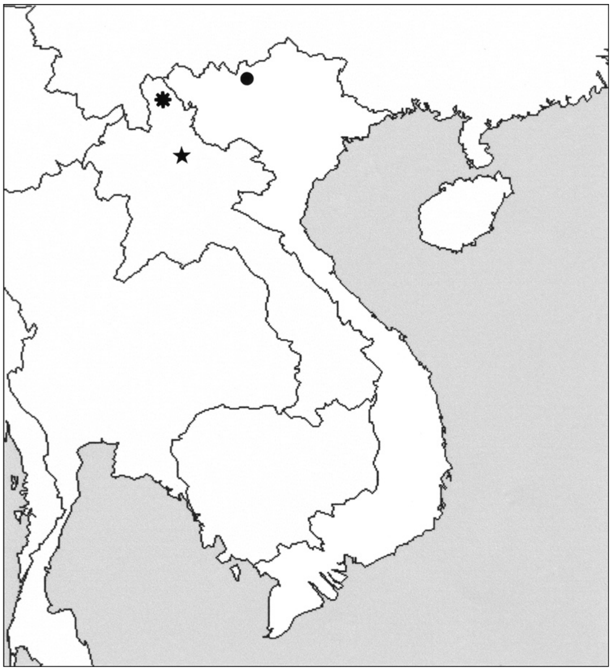


Fig. 18. Map showing the type localities of *Euscorpiops alexandreanneorum* sp. n. (star), and related species, *E. kubani* from Laos (asterisk) and *E. thaomischi* from Vietnam (circle).

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